ABSTRACT

A camera-based touch system includes at least one pair of cameras having overlapping fields of view and a touch surface encompassed within the overlapping fields of view across which a pointer is moved. The cameras of the at least one pair acquire images at intervals asynchronously. In order to estimate the position of the pointer relative to the touch surface from image data acquired by the at least one pair of cameras, the images are synthetically synchronized. During this process, for each camera in the pair, each acquired image is processed to determine the position of the pointer therein and the position of the pointer is recorded together with a timestamp representing the time elapsed between a reference point common to the cameras and the time the image was acquired. Successive pairs of recorded positions are interpolated to generate interpolated positions and the interpolated positions are recorded together with synchronization times representing times the images would have been acquired had the cameras been synchronized. Interpolated positions generated by the cameras having equivalent associated synchronization times are determined and these interpolated positions are triangulated to estimate the position of the pointer relative to the touch surface.